

Ambient Air Monitoring Report

***Chat Pile Reclamation Area
Leadwood, Missouri***

The Doe Run Company

March 2012



***1001 Diamond Ridge Suite 1100
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40391434



Superfund

June 19, 2012

Mr. Mark Nations
The Doe Run Company
P.O. Box 1633
Desloge, Missouri 63601

Re: Ambient Air Monitoring Report – Leadwood Site

Dear Mr. Nations:

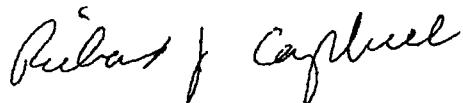
Please find attached the March 2012 “*Ambient Air Monitoring Report*” for The Doe Run Company at the Chat Pile Reclamation Area Sites, located near Leadwood, Missouri.

This report will include the following:

- **Glossary of Terms** – Listing of the abbreviations used for each parameter and unit.
- **Ambient Air Quality Standards** – Lists the maximum allowable concentrations for the measured parameters.
- **TSP, Lead & PM₁₀ Particulate Summaries** – Includes the averages of each monitored parameter, which relates to the federal standards.
- **Particulate and Lead Analysis Spreadsheets.**
- **Lab Results (lead & cadmium)** – Lab reports from Inovatia Laboratories, LLC.
- **Meteorological Data Printouts** – This supplies printouts of each parameter.

Barr Engineering Company offers this report as an independent laboratory. This includes the weighing of filters, obtaining lead and cadmium analysis, compiling the data, and preparing the report. No interpretation of the data or analysis of the results is implied or intended. Should you have any questions regarding this report, please call.

Respectfully,



Richard J. Campbell, PE
Chemical Engineer
Senior Environmental Consultant

c: Kathy Rangen
Jason Gunter
Ty Morris

GLOSSARY OF TERMS

$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter
mph	Miles per Hour
Wind Direction	Degrees from True North
TSP	Total Suspended Particulate
PM ₁₀	Particulate Matter - 10 Microns or Less
mmHg	Millimeters of Mercury

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

PM ₁₀ – Particulate Matter	24-Hour*	Annual Maximum	150 $\mu\text{g}/\text{m}^3$
Lead	Calendar Quarter	Arithmetic Mean	1.5 $\mu\text{g}/\text{m}^3$
Lead	Rolling 3-Month Average	Arithmetic Mean	0.15 $\mu\text{g}/\text{m}^3$

TSP (Total Suspended Particulate) – There are no Federal Standards that apply solely for TSP.

*This standard must be exceeded more than once a year to constitute a violation.



TSP and Lead Concentration Summary

Chat Pile Reclamation Area
Leadwood, Missouri

2012

Date	TSP Big River #4 ($\mu\text{g}/\text{m}^3$)	TSP South #1 ($\mu\text{g}/\text{m}^3$)	TSP East #2 ($\mu\text{g}/\text{m}^3$)	TSP North #3 ($\mu\text{g}/\text{m}^3$)	LEAD Big River #4 ($\mu\text{g}/\text{m}^3$)	LEAD South #1 ($\mu\text{g}/\text{m}^3$)	LEAD East #2 ($\mu\text{g}/\text{m}^3$)	LEAD North #3 ($\mu\text{g}/\text{m}^3$)
3/1/12	43	34	50	46	0.007	0.013	0.011	0.012
3/2/12	61	25	19	24	0.104	0.013	0.007	0.000
3/5/12	29	16	18	16	0.019	0.007	0.000	0.000
3/6/12	88	62	69	70	0.030	0.006	0.010	0.000
3/8/12	9	8	9	9	0.000	0.006	0.000	0.000
3/9/12	19	17	19	18	0.011	0.013	0.010	0.008
3/12/12	26	24	26	27	0.000	0.000	0.000	0.000
3/13/12	31	23	24	24	0.022	0.007	0.008	0.006
3/14/12	29	26	25	28	0.008	0.000	0.000	0.000
3/15/12	14	11	10	11	0.000	0.000	0.000	0.000
3/16/12	16	15	16	16	0.000	0.000	0.000	0.000
3/19/12	38	31	34	30	0.007	0.000	0.000	0.000
3/20/12	51	38	54	41	0.014	0.000	0.000	0.000
3/21/12	30	29	37	31	0.008	0.000	0.000	0.000
3/22/12	12	13	14	11	0.006	0.000	0.000	0.000
3/23/12	7	7	9	5	0.000	0.000	0.000	0.000
3/26/12	51	50	50	40	0.011	0.009	0.007	0.000
3/27/12	55	50	46	47	0.010	0.000	0.000	0.000
3/28/12	81	56	57	59	0.036	0.016	0.009	0.008
3/29/12	72	66	73	69	0.018	0.010	0.010	0.007
3/30/12	52	47	44	48	0.020	0.014	0.011	0.013
Monthly Average	39	31	33	32	0.016	0.005	0.004	0.003
Feb 2012					0.017	0.011	0.007	0.006
Jan 2012					0.018	0.006	0.004	0.004
Rolling 3-month Average					0.02	0.01	0.00	0.00
					3-month Average Lead NAAQS $\mu\text{g}/\text{m}^3$			
								0.15

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.



Particulate Summary

Chat Pile Reclamation Area Leadwood, Missouri

2012

Date	PM ₁₀ Big River #4 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ South #1 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ East #2 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ North #3 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ NAAQS ($\mu\text{g}/\text{m}^3$)
1-Mar	15	8	14	8	150
4-Mar	10	7	9	7	150
7-Mar	37	20	25	19	150
10-Mar	9	9	9	7	150
13-Mar	16	12	15	13	150
16-Mar	8	7	8	7	150
19-Mar	16	13	17	12	150
22-Mar	7	5	6	6	150
25-Mar	15	12	15	12	150
28-Mar	34	26	31	27	150
31-Mar	24	19	24	19	150
Monthly Average	17	13	16	12	

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.

Particulate and Lead Analysis



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4557

Big River Site #4- Primary

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP μg/m ³	Lead μg/m ³
3/1/2012	8546124	0.0753	13	11	739.5	34.5	0.953	1.223	1.247	23.60	1766	43	0.007
3/2/2012	8546115	0.1074	184	12	734.5	34.6	0.953	1.224	1.236	23.74	1760	61	0.104
3/5/2012	8546105	0.0522	34	5	752.1	33.7	0.955	1.213	1.286	23.64	1824	29	0.019
3/6/2012	8552195	0.1559	52	15	747.4	34.9	0.953	1.230	1.252	23.64	1775	88	0.030
3/8/2012	8552185	0.0166	< 10	7	749.5	34.0	0.955	1.217	1.275	23.73	1815	9	0.000
3/9/2012	8552177	0.0354	20	6	756.5	33.8	0.955	1.214	1.292	23.53	1825	19	0.011
3/12/2012	8552166	0.0454	< 10	19	742.6	35.5	0.952	1.237	1.231	23.49	1735	26	0.000
3/13/2012	8552157	0.0534	38	19	745.9	35.4	0.952	1.237	1.238	23.50	1745	31	0.022
3/14/2012	8552149	0.0501	14	22	745.7	35.8	0.952	1.241	1.229	23.39	1725	29	0.008
3/15/2012	8552138	0.0245	< 10	19	746.8	35.4	0.953	1.237	1.240	23.70	1763	14	0.000
3/16/2012	8552129	0.0284	< 10	18	746.3	35.3	0.953	1.234	1.242	23.65	1762	16	0.000
3/19/2012	8552119	0.0649	12	23	742.5	35.9	0.952	1.242	1.222	23.61	1731	38	0.007
3/20/2012	8552110	0.0873	25	23	742.1	35.9	0.952	1.242	1.222	23.49	1722	51	0.014
3/21/2012	8552102	0.0515	14	22	743.0	35.9	0.952	1.241	1.224	23.72	1742	30	0.008
3/22/2012	8552292	0.0219	11	15	744.0	34.9	0.953	1.230	1.245	23.59	1762	12	0.006
3/23/2012	8552282	0.0120	< 10	13	741.3	34.7	0.953	1.226	1.246	23.63	1767	7	0.000
3/26/2012	8552272	0.0888	19	17	747.0	35.2	0.953	1.233	1.245	23.54	1758	51	0.011
3/27/2012	8552263	0.0956	17	20	745.4	35.6	0.952	1.239	1.234	23.65	1751	55	0.010
3/28/2012	8552256	0.1407	63	21	743.9	35.7	0.952	1.240	1.228	23.66	1744	81	0.036
3/29/2012	8552243	0.1238	31	19	742.1	35.5	0.952	1.237	1.230	23.22	1714	72	0.018
3/30/2012	8552234	0.0906	36	21	739.0	35.7	0.952	1.239	1.220	23.86	1747	52	0.020

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	39	0.016
Standard Deviation:	24	0.023
Maximum:	88	0.104
Minimum:	7	0.000

NOTES

3/7 - Training - No samples scheduled

Filter Blank QA							Nominal Airflow				Tolerance ≤ μm ³		
3/28/2012	8552248	-0.0027	25	760.0	36.2	0.952	1.236	1.236	24.00	1780	-1.5		

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius

P_{av} = average station pressure in millimeters of mercury

P_f = ((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868

P_f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

P_f/P_a = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}

Q_a = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in μg/std m³

Lead = mass concentration in μg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4559

Leadwood Site #1 Wortham

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T_{av} C	P_{av} mmHg	P_f mmHg	Ratio P_f/P_{av}	Q_a m^3/min	Q_{std} m^3/min	Elapsed Time hr	Sample Volume V_{std} m^3	Mass Concentrations TSP $\mu\text{g}/\text{m}^3$	Lead $\mu\text{g}/\text{m}^3$
3/1/2012	8556118	0.0607	24	11	739.5	34.5	0.953	1.228	1.252	23.54	1769	34	0.013
3/2/2012	8556109	0.0434	23	12	734.5	34.6	0.953	1.229	1.241	23.72	1766	25	0.013
3/5/2012	8556106	0.0301	12	5	752.1	33.7	0.955	1.219	1.292	23.68	1835	16	0.007
3/6/2012	8552197	0.1111	10	15	747.4	34.9	0.953	1.235	1.257	23.68	1786	62	0.008
3/8/2012	8552187	0.0148	11	7	749.5	34.0	0.955	1.223	1.281	23.68	1820	8	0.006
3/9/2012	8552171	0.0320	24	6	756.5	33.8	0.955	1.220	1.299	23.76	1851	17	0.013
3/12/2012	8552168	0.0429	< 10	19	742.6	35.5	0.952	1.242	1.236	23.72	1759	24	0.000
3/13/2012	8552158	0.0412	13	19	745.9	35.4	0.952	1.242	1.243	23.77	1773	23	0.007
3/14/2012	8552143	0.0452	< 10	22	745.7	35.8	0.952	1.247	1.235	23.66	1753	26	0.000
3/15/2012	8552140	0.0198	< 10	19	746.8	35.4	0.953	1.242	1.245	23.71	1771	11	0.000
3/16/2012	8552130	0.0274	< 10	18	746.3	35.3	0.953	1.240	1.247	23.72	1775	15	0.000
3/19/2012	8552121	0.0524	< 10	23	742.5	35.9	0.952	1.248	1.228	23.04	1698	31	0.000
3/20/2012	8552111	0.0662	< 10	23	742.1	35.9	0.952	1.248	1.228	23.60	1739	38	0.000
3/21/2012	8552296	0.0503	< 10	22	743.0	35.9	0.952	1.247	1.230	23.15	1708	29	0.000
3/22/2012	8552286	0.0225	< 10	15	744.0	34.9	0.953	1.235	1.251	23.49	1763	13	0.000
3/23/2012	8552283	0.0120	< 10	13	741.3	34.7	0.953	1.231	1.252	23.62	1774	7	0.000
3/26/2012	8552274	0.0892	16	17	747.0	35.2	0.953	1.239	1.250	23.70	1778	50	0.009
3/27/2012	8552264	0.0884	< 10	20	745.4	35.6	0.952	1.244	1.239	23.78	1768	50	0.000
3/28/2012	8552249	0.0995	27	21	743.9	35.7	0.952	1.245	1.234	23.78	1761	56	0.018
3/29/2012	8552245	0.1159	18	19	742.1	35.5	0.952	1.242	1.235	23.74	1760	66	0.010
3/30/2012	8552235	0.0808	24	21	739.0	35.7	0.952	1.245	1.226	23.38	1720	47	0.014

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	31	0.005
Standard Deviation:	18	0.006
Maximum:	66	0.016
Minimum:	7	0.000

NOTES

3/7 - Training - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius

P_{av} = average station pressure in millimeters of mercury

$P_f = (((\text{Temp in } ^\circ\text{Kelvin} * \text{Temp Slope}) + \text{Temp Int.})) * 1.868$

$P_f = ((\text{Temp in } ^\circ\text{Kelvin} * 0.0664) + (-0.4213)) * 1.868$

P_f/P_{av} = pressure ratio of P_f and P_{av} = $1 - P_f/P_{av}$

Q_a = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in $\mu\text{g}/\text{std m}^3$

Lead = mass concentration in $\mu\text{g}/\text{std m}^3$



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4476

Leadwood Site #2 - Office

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T_w C	P_w mmHg	P_f mmHg	Ratio P_f/P_w	Q_a m^3/min	Q_{std} m^3/min	Elapsed Time hr	Sample Volume V_{std} m^3	Mass Concentrations TSP $\mu\text{g}/\text{m}^3$	Lead $\mu\text{g}/\text{m}^3$
3/1/2012	8556120	0.0884	20	11	739.5	34.5	0.953	1.212	1.236	23.90	1772	50	0.011
3/2/2012	8556111	0.0336	12	12	734.5	34.6	0.953	1.213	1.225	23.89	1755	19	0.007
3/5/2012	8556108	0.0327	< 10	5	752.1	33.7	0.955	1.202	1.274	23.88	1826	18	0.000
3/6/2012	8552199	0.1228	17	15	747.4	34.9	0.953	1.219	1.240	23.91	1779	69	0.010
3/8/2012	8552189	0.0162	< 10	7	749.5	34.0	0.955	1.206	1.264	23.83	1807	9	0.000
3/9/2012	8552173	0.0351	18	6	758.5	33.8	0.955	1.204	1.281	23.66	1819	19	0.010
3/12/2012	8552170	0.0445	< 10	19	742.6	35.5	0.952	1.226	1.220	23.78	1740	26	0.000
3/13/2012	8552160	0.0415	14	19	745.9	35.4	0.952	1.225	1.226	23.92	1760	24	0.008
3/14/2012	8552145	0.0436	< 10	22	745.7	35.8	0.952	1.231	1.219	23.82	1742	25	0.000
3/15/2012	8552142	0.0178	< 10	19	746.8	35.4	0.953	1.225	1.228	23.83	1756	10	0.000
3/16/2012	8552132	0.0274	< 10	18	746.3	35.3	0.953	1.223	1.230	23.80	1757	16	0.000
3/19/2012	8552123	0.0584	< 10	23	742.5	35.9	0.952	1.231	1.212	23.78	1729	34	0.000
3/20/2012	8552113	0.0939	< 10	23	742.1	35.9	0.952	1.231	1.211	23.88	1736	54	0.000
3/21/2012	8552298	0.0638	< 10	22	743.0	35.9	0.952	1.231	1.213	23.65	1722	37	0.000
3/22/2012	8552288	0.0248	< 10	15	744.0	34.9	0.953	1.219	1.234	23.92	1771	14	0.000
3/23/2012	8552285	0.0157	< 10	13	741.3	34.7	0.953	1.215	1.235	23.86	1768	9	0.000
3/26/2012	8552276	0.0877	13	17	747.0	35.2	0.953	1.222	1.233	23.78	1760	50	0.007
3/27/2012	8552266	0.0800	< 10	20	745.4	35.6	0.952	1.227	1.223	23.96	1758	46	0.000
3/28/2012	8552251	0.0990	16	21	743.9	35.7	0.952	1.229	1.218	23.97	1751	57	0.009
3/29/2012	8552247	0.1268	17	19	742.1	35.5	0.952	1.226	1.219	23.88	1746	73	0.010
3/30/2012	8552237	0.0771	19	21	739.0	35.7	0.952	1.228	1.210	23.88	1733	44	0.011

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	33	0.004
Standard Deviation:	20	0.005
Maximum:	73	0.011
Minimum:	9	0.000

NOTES

3/7 - Training - No samples scheduled

DEFINITIONS and CALCULATIONS

T_w = average temperature in degrees Celsius
 P_w = average station pressure in millimeters of mercury
 $P_t = (((\text{Temp in } ^\circ\text{K} * \text{Temp Slope}) + \text{Temp Int.}) * 1.868$
 $P_f = ((\text{Temp in } ^\circ\text{K} * 0.0664) + (-0.4213)) * 1.868$
 $P_r/P_w = \text{pressure ratio of } P_f \text{ and } P_w = 1 - P_f/P_w$

Q_a = look up table volumetric flow rate
 Q_{std} = total sample volumetric flow rate corrected to standard conditions
 V_{std} = total sample volume corrected to standard conditions
TSP = mass concentration in $\mu\text{g}/\text{std m}^3$
Lead = mass concentration in $\mu\text{g}/\text{std m}^3$



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P6793

Leadwood Site #3 by School

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T _{av} C	P _{av} mmHg	P _r mmHg	Ratio P _r /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations	
												TSP μg/m ³	Lead μg/m ³
3/1/2012	8546119	0.0810	21	11	739.5	34.5	0.953	1.209	1.233	23.74	1756	46	0.012
3/2/2012	8546110	0.0427	< 10	12	734.5	34.6	0.953	1.211	1.222	23.87	1750	24	0.000
3/5/2012	8546107	0.0286	< 10	5	752.1	33.7	0.955	1.200	1.272	23.70	1809	16	0.000
3/6/2012	8552198	0.1227	< 10	15	747.4	34.9	0.953	1.216	1.238	23.73	1782	70	0.000
3/8/2012	8552188	0.0155	< 10	7	749.5	34.0	0.955	1.203	1.281	23.75	1797	9	0.000
3/9/2012	8552172	0.0330	14	6	756.5	33.8	0.955	1.201	1.278	23.84	1829	18	0.008
3/12/2012	8552169	0.0479	< 10	19	742.8	35.5	0.952	1.224	1.218	23.83	1741	27	0.000
3/13/2012	8552159	0.0415	11	19	745.9	35.4	0.952	1.223	1.224	23.70	1741	24	0.008
3/14/2012	8552144	0.0489	< 10	22	745.7	35.8	0.952	1.228	1.218	23.90	1744	28	0.000
3/15/2012	8552141	0.0190	< 10	19	746.8	35.4	0.953	1.223	1.228	23.74	1746	11	0.000
3/16/2012	8552131	0.0276	< 10	18	746.3	35.3	0.953	1.221	1.228	23.81	1754	16	0.000
3/19/2012	8552122	0.0527	< 10	23	742.5	35.9	0.952	1.229	1.209	23.85	1730	30	0.000
3/20/2012	8552112	0.0701	< 10	23	742.1	35.9	0.952	1.228	1.209	23.80	1726	41	0.000
3/21/2012	8552297	0.0532	< 10	22	743.0	35.9	0.952	1.228	1.211	23.77	1727	31	0.000
3/22/2012	8552287	0.0200	< 10	15	744.0	34.9	0.953	1.216	1.231	23.80	1758	11	0.000
3/23/2012	8552284	0.0085	< 10	13	741.3	34.7	0.953	1.212	1.232	23.75	1758	5	0.000
3/26/2012	8552275	0.0700	< 10	17	747.0	35.2	0.953	1.220	1.231	23.78	1756	40	0.000
3/27/2012	8552265	0.0619	< 10	20	745.4	35.6	0.952	1.225	1.221	23.84	1746	47	0.000
3/28/2012	8552250	0.1025	14	21	743.9	35.7	0.952	1.227	1.215	23.96	1747	59	0.008
3/29/2012	8552248	0.1208	12	19	742.1	35.5	0.952	1.224	1.217	23.86	1742	69	0.007
3/30/2012	8552238	0.0832	22	21	739.0	35.7	0.952	1.226	1.207	23.81	1725	48	0.013

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	32	0.003
Standard Deviation:	19	0.004
Maximum:	70	0.013
Minimum:	5	0.000

NOTES

3/7 - Training - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius

P_{av} = average station pressure in millimeters of mercury

P_r = ((Temp in °Kelvin * Temp Slope)+Temp Int.)*1.066

P_r = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.066

P_r/P_a = pressure ratio of P_r and P_{av} = 1 - P_r/P_{av}

Q_a = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in μg/std m³

Lead = mass concentration in μg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P6609

Big River Site #4 - QA

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T_{av} C	P_{av} mmHg	P_t mmHg	Ratio P_t/P_{av}	Q_a m^3/min	Q_{std} m^3/min	Elapsed Time hr	Sample Volume V_{std} m^3	Mass Concentrations TSP $\mu\text{g}/\text{m}^3$	Lead $\mu\text{g}/\text{m}^3$
3/1/2012	8546135	0.0797	16	11	739.5	34.5	0.953	1.214	1.238	23.85	1771	45	0.009
3/6/2012	8552198	0.1593	57	15	747.4	34.9	0.953	1.221	1.243	23.25	1733	92	0.033
3/8/2012	8552186	0.0198	< 10	7	749.5	34.0	0.955	1.208	1.268	23.76	1805	11	0.000
3/13/2012	8552167	0.0582	36	19	745.9	35.4	0.952	1.228	1.229	24.02	1771	33	0.020
3/15/2012	8552139	0.0247	< 10	19	746.8	35.4	0.953	1.228	1.231	23.75	1754	14	0.000
3/20/2012	8552120	0.0844	28	23	742.1	35.9	0.952	1.234	1.214	23.88	1739	49	0.016
3/22/2012	8552293	0.0217	12	15	744.0	34.9	0.953	1.221	1.238	23.52	1744	12	0.007
3/27/2012	8552273	0.1058	18	20	745.4	35.6	0.952	1.230	1.225	23.71	1743	61	0.010
3/29/2012	8552244	0.0677	30	19	742.1	35.5	0.952	1.228	1.221	23.79	1743	39	0.017

Valid Samples:	9	9
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Monthly Average:	39	0.013
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Scheduled Samples:	9	9
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Standard Deviation:	26	0.011
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Percent Data Captured:	100%	100%
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Maximum:	92	0.033
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Minimum:	11	0.000
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NOTES

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius

Q_a = look up table volumetric flow rate

P_{av} = average station pressure in millimeters of mercury

Q_{std} = total sample volumetric flow rate corrected to standard conditions

P_t = (((Temp in "Kelvin * Temp Slope))+Temp Int.)*1.888

V_{std} = total sample volume corrected to standard conditions

P_t = ((Temp in "Kelvin * 0.0664)+(-0.4213))*1.888

TSP = mass concentration in $\mu\text{g}/\text{std m}^3$

P_t/P_{av} = pressure ratio of P_t and P_{av} = 1 - P_t/P_{av}

Lead = mass concentration in $\mu\text{g}/\text{std m}^3$



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P2952										Big River Site #4- Primary		
Sample Date 2012	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³	
3/1/2012	272041	0.0244	11	739.5	34.5	0.953	1.129	1.152	23.65	1634	15	
3/4/2012	272030	0.0171	4	742.9	33.6	0.955	1.119	1.174	23.65	1666	10	
3/7/2012	272022	0.0597	18	745.2	35.3	0.953	1.140	1.146	23.67	1627	37	
3/10/2012	272012	0.0154	8	754.0	34.0	0.955	1.125	1.185	23.72	1686	9	
3/13/2012	272003	0.0254	19	745.9	35.4	0.952	1.142	1.143	23.79	1632	16	
3/16/2012	272193	0.0134	18	746.3	35.3	0.953	1.140	1.147	23.65	1627	8	
3/19/2012	272184	0.0261	23	742.5	35.9	0.952	1.147	1.129	23.65	1602	16	
3/22/2012	272173	0.0110	15	744.0	34.9	0.953	1.136	1.150	23.70	1635	7	
3/25/2012	272165	0.0247	16	745.2	35.1	0.953	1.138	1.148	23.68	1631	15	
3/28/2012	272156	0.0545	21	743.9	35.7	0.952	1.145	1.135	23.66	1611	34	
3/31/2012	272145	0.0391	18	740.5	35.3	0.952	1.141	1.136	23.71	1616	24	

Valid Samples:	11
Scheduled Samples:	11
Percent Data Captured:	100%

Monthly Average:	17
Standard Deviation:	10
Maximum:	37
Minimum:	7

NOTES											
Filter Blank QA		Nominal Airflow					Tolerance $\pm 5 \mu\text{m}^3$				
3/28/2012	272151	-0.0008	25	760.0	36.2	0.952	1.153	1.153	24.00	1660	-0.5

DEFINITIONS and CALCULATIONS											
T_{av} = average temperature in degrees Celcius						P_f/P_a = pressure ratio of P_f and P_{av} = $1 - P_f/P_{av}$					
P_{av} = average station pressure in millimeters of mercury						Q_a = look up table volumetric flow rate					
$P_f = ((\text{Temp in } ^\circ\text{Kelvin} * \text{Temp Slope}) + \text{Temp Int.}) * 1.868$						Q_{std} = sample volumetric flow rate corrected to standard conditions					
$P_f = ((\text{Temp in } ^\circ\text{Kelvin} * 0.0664) + (-0.4213)) * 1.868$						V_{std} = sample volume corrected to standard conditions					



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P1500										Leadwood Site #1 Wortham		
Sample Date 2012	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _r mmHg	Ratio P _r /P _a	Q _e m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ μg/m ³	
3/1/2012	272047	0.0137	11	739.5	34.5	0.953	1.142	1.185	23.81	1664	8	
3/4/2012	272036	0.0120	4	742.9	33.6	0.955	1.132	1.187	23.85	1699	7	
3/7/2012	272021	0.0337	18	745.2	35.3	0.953	1.153	1.159	23.79	1654	20	
3/10/2012	272018	0.0160	8	754.0	34.0	0.955	1.138	1.198	23.84	1714	9	
3/13/2012	272001	0.0203	19	745.9	35.4	0.952	1.155	1.156	23.98	1664	12	
3/16/2012	272192	0.0121	18	746.3	35.3	0.953	1.153	1.180	23.83	1658	7	
3/19/2012	272182	0.0209	23	742.5	35.9	0.952	1.160	1.142	23.82	1632	13	
3/22/2012	272179	0.0088	15	744.0	34.9	0.953	1.149	1.163	23.82	1682	5	
3/25/2012	272164	0.0198	16	745.2	35.1	0.953	1.151	1.181	23.82	1660	12	
3/28/2012	272154	0.0431	21	743.9	35.7	0.952	1.158	1.148	23.83	1641	26	
3/31/2012	272144	0.0316	18	740.5	35.3	0.952	1.154	1.149	23.84	1644	19	
Valid Samples: 11	Scheduled Samples: 11	Percent Data Captured: 100%										
										Monthly Average: 13		
										Standard Deviation: 7		
										Maximum: 28		
										Minimum: 5		
NOTES												
DEFINITIONS and CALCULATIONS												
T _{av} = average temperature in degrees Celcius	P _r /P _a = pressure ratio of P _r and P _{av} = 1 - P _r /P _{av}											
P _{av} = average station pressure in millimeters of mercury	Q _e = look up table volumetric flow rate											
P _r = ((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868	Q _{std} = sample volumetric flow rate corrected to standard conditions											
P _f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868	V _{std} = sample volume corrected to standard conditions											



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P1018										Leadwood Site #2 - Office		
Sample Date 2012	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _s	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ μg/m ³	
3/1/2012	272045	0.0228	11	739.5	34.5	0.953	1.144	1.166	23.90	1673	14	
3/4/2012	272034	0.0150	4	742.9	33.6	0.955	1.133	1.189	23.85	1702	9	
3/7/2012	272019	0.0417	18	745.2	35.3	0.953	1.154	1.160	23.90	1664	25	
3/10/2012	272016	0.0160	8	754.0	34.0	0.955	1.139	1.200	23.85	1717	9	
3/13/2012	272199	0.0253	19	745.9	35.4	0.952	1.157	1.158	24.01	1668	15	
3/16/2012	272190	0.0129	18	746.3	35.3	0.953	1.155	1.161	23.84	1661	8	
3/19/2012	272180	0.0282	23	742.5	35.9	0.952	1.162	1.143	23.86	1637	17	
3/22/2012	272177	0.0098	15	744.0	34.9	0.953	1.150	1.164	23.98	1675	6	
3/25/2012	272162	0.0243	18	745.2	35.1	0.953	1.153	1.163	23.93	1670	15	
3/28/2012	272152	0.0513	21	743.9	35.7	0.952	1.160	1.149	23.89	1647	31	
3/31/2012	272142	0.0390	18	740.5	35.3	0.952	1.155	1.151	23.88	1649	24	
Valid Samples:	11	Scheduled Samples:	11	Percent Data Captured:	100%							
										Monthly Average:	16	
										Standard Deviation:	8	
										Maximum:	31	
										Minimum:	6	
NOTES												
DEFINITIONS and CALCULATIONS												
T_{av} = average temperature in degrees Celcius						P_f/P_s = pressure ratio of P _f and P _{av} = 1 - P _f /P _{av}						
P_{av} = average station pressure in millimeters of mercury						Q _a = look up table volumetric flow rate						
$P_f = ((\text{Temp in } ^\circ\text{Kelvin} * \text{Temp Slope}) + \text{Temp Int.}) * 1.868$						Q _{std} = sample volumetric flow rate corrected to standard conditions						
$P_f = ((\text{Temp in } ^\circ\text{Kelvin} * 0.0684) + (-0.4213)) * 1.868$						V _{std} = sample volume corrected to standard conditions						



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P6071										Leadwood Site #3 by School							
Sample Date 2012	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³						
3/1/2012	272046	0.0140	11	739.5	34.5	0.953	1.154	1.176	23.59	1665	8						
3/4/2012	272035	0.0118	4	742.9	33.6	0.955	1.143	1.199	23.57	1696	7						
3/7/2012	272020	0.0322	18	745.2	35.3	0.953	1.164	1.170	23.60	1657	19						
3/10/2012	272017	0.0116	8	754.0	34.0	0.955	1.149	1.210	23.61	1714	7						
3/13/2012	272200	0.0216	19	745.9	35.4	0.952	1.166	1.167	23.78	1664	13						
3/16/2012	272191	0.0119	18	746.3	35.3	0.953	1.165	1.171	23.56	1658	7						
3/19/2012	272181	0.0196	23	742.5	35.9	0.952	1.172	1.153	23.60	1633	12						
3/22/2012	272178	0.0092	15	744.0	34.9	0.953	1.160	1.174	23.62	1664	6						
3/25/2012	272163	0.0202	16	745.2	35.1	0.953	1.162	1.173	23.59	1660	12						
3/28/2012	272153	0.0437	21	743.9	35.7	0.952	1.170	1.159	23.59	1640	27						
3/31/2012	272143	0.0304	18	740.5	35.3	0.952	1.165	1.161	23.58	1642	19						
Valid Samples:	11	Scheduled Samples:	11	Percent Data Captured:	100%												
							Monthly Average:	12	Standard Deviation:	7	Maximum:	27					
							Minimum:	6									
NOTES																	
DEFINITIONS and CALCULATIONS																	
T _{av} = average temperature in degrees Celcius							P _f /P _a = pressure ratio of P _f and P _{av} = 1 - P _f /P _{av}										
P _{av} = average station pressure in millimeters of mercury							Q _a = look up table volumetric flow rate										
P _f = ((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868							Q _{std} = sample volumetric flow rate corrected to standard conditions										
P _f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868							V _{std} = sample volume corrected to standard conditions										



PM₁₀ Analysis

The Doe Run Company

Big River Site #4 - QA																													
SAMPLER ID	P1019	Sample Date	Filter ID	PM10 Filter Net Wt.	T _{av}	P _{av}	P _r	Ratio P _r /P _a	Q _a	Q _{std}	Elapsed Time	Sample Volume V _{std}	Mass Conc. PM ₁₀ µg/m ³																
3/4/2012	272040	0.0162	4	0.0162	742.9	33.6	0.955	0.955	1.132	1.188	23.88	1703	10																
3/10/2012	272011	0.0168	8	0.0168	754.0	34.0	0.955	0.955	1.138	1.199	23.88	1717	10																
3/16/2012	272002	0.0148	18	0.0148	746.3	35.3	0.953	0.953	1.154	1.160	23.94	1667	9																
3/22/2012	272183	0.0114	15	0.0114	744.0	34.9	0.953	0.953	1.149	1.163	23.86	1665	7																
3/28/2012	272155	0.0490	21	0.0490	743.9	35.7	0.952	0.952	1.159	1.148	23.86	1644	30																
<table border="1"><tr><td>Valid Samples:</td><td>5</td><td>Monthly Average:</td><td>13</td></tr><tr><td>Scheduled Samples:</td><td>5</td><td>Standard Deviation:</td><td>9</td></tr><tr><td>Percent Data Captured:</td><td>100%</td><td>Maximum:</td><td>30</td></tr><tr><td></td><td></td><td>Minimum:</td><td>7</td></tr></table>				Valid Samples:	5	Monthly Average:	13	Scheduled Samples:	5	Standard Deviation:	9	Percent Data Captured:	100%	Maximum:	30			Minimum:	7										
Valid Samples:	5	Monthly Average:	13																										
Scheduled Samples:	5	Standard Deviation:	9																										
Percent Data Captured:	100%	Maximum:	30																										
		Minimum:	7																										
NOTES																													
DEFINITIONS and CALCULATIONS																													
T _{av} = average temperature in degrees Celsius							P _r /P _a = pressure ratio of P _r and P _{av} = 1 - P _r /P _{av}																						
P _{av} = average station pressure in millimeters of mercury							Q _a = look up table volumetric flow rate																						
P _r = ((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868							Q _{std} = sample volumetric flow rate corrected to standard conditions																						
P _t = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868							V _{std} = sample volume corrected to standard conditions																						

Lab Results (Lead and Cadmium)



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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0265
Date Received: 03/11/12
Analysis Method: 40 CFR §50
Appendix G

Location Leadwood

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
121452	8546118	03/01/12	#1 South - Wortham	24	< 10	04/11/12 - DS
121453	8546120	03/01/12	#2 East - Office	20	< 10	04/11/12 - DS
121454	8546119	03/01/12	#3 North - School	21	< 10	04/11/12 - DS
121455	8546109	03/02/12	#1 South - Wortham	23	< 10	04/11/12 - DS
121456	8546111	03/02/12	#2 East - Office	12	< 10	04/11/12 - DS
121457	8546110	03/02/12	#3 North - School	< 10	< 10	04/11/12 - DS
121458	8546106	03/05/12	#1 South - Wortham	12	< 10	04/11/12 - DS
121459	8546108	03/05/12	#2 East - Office	< 10	< 10	04/11/12 - DS
121460	8546107	03/05/12	#3 North - School	< 10	< 10	04/11/12 - DS
121461	8552197	03/06/12	#1 South - Wortham	10	< 10	04/11/12 - DS
121462	8552199	03/06/12	#2 East - Office	17	< 10	04/11/12 - DS
121463	8552198	03/06/12	#3 North - School	< 10	< 10	04/11/12 - DS
121464	8552187	03/08/12	#1 South - Wortham	11	< 10	04/11/12 - DS
121465	8552189	03/08/12	#2 East - Office	< 10	< 10	04/11/12 - DS
121466	8552188	03/08/12	#3 North - School	< 10	< 10	04/11/12 - DS
121467	8552171	03/09/12	#1 South - Wortham	24	< 10	04/11/12 - DS
121468	8552173	03/09/12	#2 East - Office	18	< 10	04/11/12 - DS
121469	8552172	03/09/12	#3 North - School	14	< 10	04/11/12 - DS

Submitted by:

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Date

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0290
Date Received: 03/29/12
Analysis Method: 40 CFR §50
Appendix G

Location Leadwood

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
121558	8552168	03/12/12	#1 South - Wortham	< 10	< 10	04/17/12 - DS
121559	8552170	03/12/12	#2 East - Office	< 10	< 10	04/17/12 - DS
121560	8552169	03/12/12	#3 North - School	< 10	< 10	04/17/12 - DS
121561	8552158	03/13/12	#1 South - Wortham	13	< 10	04/17/12 - DS
121562	8552160	03/13/12	#2 East - Office	14	< 10	04/17/12 - DS
121563	8552159	03/13/12	#3 North - School	11	< 10	04/17/12 - DS
121564	8552143	03/14/12	#1 South - Wortham	< 10	< 10	04/17/12 - DS
121565	8552145	03/14/12	#2 East - Office	< 10	< 10	04/17/12 - DS
121566	8552144	03/14/12	#3 North - School	< 10	< 10	04/17/12 - DS
121567	8552140	03/15/12	#1 South - Wortham	< 10	< 10	04/17/12 - DS
121568	8552142	03/15/12	#2 East - Office	< 10	< 10	04/17/12 - DS
121569	8552141	03/15/12	#3 North - School	< 10	< 10	04/17/12 - DS
121570	8552130	03/16/12	#1 South - Wortham	< 10	< 10	04/17/12 - DS
121571	8552132	03/16/12	#2 East - Office	< 10	< 10	04/17/12 - DS
121572	8552131	03/16/12	#3 North - School	< 10	< 10	04/17/12 - DS

Submitted by:

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Vandelicht
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4/20/12

Date

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0292
Date Received: 04/04/12
Analysis Method: 40 CFR §50
Appendix G

Location Leadwood

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
121619	8552121	03/19/12	#1 South - Wortham	< 10	< 10	04/19/12 - DS
121620	8552123	03/19/12	#2 East - Office	< 10	< 10	04/19/12 - DS
121621	8552122	03/19/12	#3 North - School	< 10	< 10	04/19/12 - DS
121622	8552111	03/20/12	#1 South - Wortham	< 10	< 10	04/19/12 - DS
121623	8552113	03/20/12	#2 East - Office	< 10	< 10	04/19/12 - DS
121624	8552112	03/20/12	#3 North - School	< 10	< 10	04/19/12 - DS
121625	8552296	03/21/12	#1 South - Wortham	< 10	< 10	04/19/12 - DS
121626	8552298	03/21/12	#2 East - Office	< 10	< 10	04/19/12 - DS
121627	8552297	03/21/12	#3 North - School	< 10	< 10	04/19/12 - DS
121628	8552286	03/22/12	#1 South - Wortham	< 10	< 10	04/19/12 - DS
121629	8552288	03/22/12	#2 East - Office	< 10	< 10	04/19/12 - DS
121630	8552287	03/22/12	#3 North - School	< 10	< 10	04/19/12 - DS
121631	8552283	03/23/12	#1 South - Wortham	< 10	< 10	04/19/12 - DS
121632	8552285	03/23/12	#2 East - Office	< 10	< 10	04/19/12 - DS
121633	8552284	03/23/12	#3 North - School	< 10	< 10	04/19/12 - DS

Submitted by:

Jennifer Vandelicht
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4/20/12

Date

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0335
Date Received: 04/17/12
Analysis Method: 40 CFR §50
Appendix G

Location Leadwood

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
121844	8552274	03/26/12	#1 South - Wortham	16	< 10	05/08/12 - DS
121845	8552276	03/26/12	#2 East - Office	13	< 10	05/08/12 - DS
121846	8552275	03/26/12	#3 North - School	< 10	< 10	05/08/12 - DS
121847	8552264	03/27/12	#1 South - Wortham	< 10	< 10	05/08/12 - DS
121848	8552266	03/27/12	#2 East - Office	< 10	< 10	05/08/12 - DS
121849	8552265	03/27/12	#3 North - School	< 10	< 10	05/08/12 - DS
121850	8552249	03/28/12	#1 South - Wortham	27	< 10	05/08/12 - DS
121851	8552251	03/28/12	#2 East - Office	16	< 10	05/09/12 - DS
121852	8552250	03/28/12	#3 North - School	14	< 10	05/09/12 - DS
121853	8552245	03/29/12	#1 South - Wortham	18	< 10	05/09/12 - DS
121854	8552247	03/29/12	#2 East - Office	17	< 10	05/09/12 - DS
121855	8552246	03/29/12	#3 North - School	12	< 10	05/09/12 - DS
121856	8552235	03/30/12	#1 South - Wortham	24	< 10	05/09/12 - DS
121857	8552237	03/30/12	#2 East - Office	19	< 10	05/09/12 - DS
121858	8552236	03/30/12	#3 North - School	22	< 10	05/09/12 - DS

Submitted by:


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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0265
Date Received: 03/11/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
121425	8546124	03/01/12	#4 Primary	13	< 10	04/12/12 - DS
121426	8546135	03/01/12	#4 QA	16	< 10	04/12/12 - DS
121427	8546115	03/02/12	#4 Primary	184	< 10	04/12/12 - DS
121428	8546105	03/05/12	#4 Primary	34	< 10	04/12/12 - DS
121429	8552195	03/06/12	#4 Primary	52	< 10	04/12/12 - DS
121430	8552196	03/06/12	#4 QA	57	< 10	04/12/12 - DS
121431	8552185	03/08/12	#4 Primary	< 10	< 10	04/12/12 - DS
121432	8552186	03/08/12	#4 QA	< 10	< 10	04/12/12 - DS
121433	8552177	03/09/12	#4 Primary	20	< 10	04/12/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0290
Date Received: 03/29/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
121536	8552166	03/12/12	#4 Primary	< 10	< 10	04/17/12 - DS
121537	8552157	03/13/12	#4 Primary	38	< 10	04/17/12 - DS
121538	8552167	03/13/12	#4 QA	36	< 10	04/17/12 - DS
121539	8552149	03/14/12	#4 Primary	14	< 10	04/17/12 - DS
121540	8552138	03/15/12	#4 Primary	< 10	< 10	04/17/12 - DS
121541	8552139	03/15/12	#4 QA	< 10	< 10	04/17/12 - DS
121542	8552129	03/16/12	#4 Primary	< 10	< 10	04/17/12 - DS

Submitted by: _____


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Date: 2012.04.20 11:14:09 -05'00'

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0292
Date Received: 04/04/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
121597	8552119	03/19/12	#4 Primary	12	< 10	04/19/12 - DS
121598	8552110	03/20/12	#4 Primary	25	< 10	04/19/12 - DS
121599	8552120	03/20/12	#4 QA	28	< 10	04/19/12 - DS
121600	8552102	03/21/12	#4 Primary	14	< 10	04/19/12 - DS
121601	8552292	03/22/12	#4 Primary	11	< 10	04/19/12 - DS
121602	8552293	03/22/12	#4 QA	12	< 10	04/19/12 - DS
121603	8552282	03/23/12	#4 Primary	< 10	< 10	04/19/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0335
Date Received: 04/17/12
Analysis Method: 40 CFR §50
Appendix G

Location

Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
121821	8552272	03/26/12	#4 Primary	19	< 10	05/08/12 - DS
121822	8552263	03/27/12	#4 Primary	17	< 10	05/08/12 - DS
121823	8552273	03/27/12	#4 QA	18	< 10	05/08/12 - DS
121824	8552248	03/28/12	#4 Primary	< 10	< 10	05/08/12 - DS
121825	8552256	03/28/12	#4 Primary	63	< 10	05/08/12 - DS
121826	8552243	03/29/12	#4 Primary	31	< 10	05/08/12 - DS
121827	8552244	03/29/12	#4 QA	30	< 10	05/08/12 - DS
121828	8552234	03/30/12	#4 Primary	36	< 10	05/08/12 - DS

Submitted by:

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5/10/12

Date

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Meteorological Data

Meteorological Report
The Doe Run Company
Wind Speed

Site Name: Rivermines

Average Interval: 01 Hour

Units: mph

Sampling Frequency: 01 Second

2012	Hour																									24 Hour Avg	Max	Avg
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Mar	2.5	1.8	0.2	0.9	0.0	1.8	1.6	1.3	0.3	1.7	3.5	4.1	7.3	8.3	9.6	11.2	10.1	8.7	4.9	4.4	4.2	3.8	2.5	4.8	11.2	4.2		
2-Mar	7.8	8.9	3.4	3.8	6.9	9.8	11.9	14.0	13.3	16.0	15.1	11.9	14.8	12.8	11.6	13.0	12.9	13.3	10.0	8.1	2.9	3.3	3.4	4.7	16.0	9.8		
3-Mar	5.1	5.3	4.7	4.3	3.8	3.8	3.8	4.1	6.1	7.5	8.1	8.9	9.3	10.8	10.6	10.4	11.4	10.5	8.3	4.1	1.5	1.7	2.2	0.8	11.4	6.1		
4-Mar	0.8	2.4	3.1	1.2	1.9	1.9	0.7	2.3	3.1	4.7	5.8	6.7	5.3	4.1	4.1	3.6	3.9	3.7	0.6	3.3	9.0	6.4	10.4	17.7	17.7	4.4		
5-Mar	17.5	15.4	12.1	8.2	8.1	4.0	1.6	0.4	2.8	3.4	3.2	3.8	3.1	3.6	4.5	5.6	7.2	6.8	7.8	6.9	6.7	7.8	7.9	17.5	6.4			
6-Mar	6.2	6.6	7.7	12.8	13.0	9.2	9.2	10.5	14.3	13.3	15.2	17.1	20.2	18.1	17.7	15.3	15.3	13.5	13.9	14.1	15.2	15.3	14.8	12.7	20.2	13.4		
7-Mar	12.0	12.2	12.0	12.5	14.2	14.3	18.1	17.0	17.3	16.1	16.9	18.4	17.4	14.3	14.9	12.7	10.7	9.8	11.3	13.1	13.0	12.5	12.2	11.8	17.4	13.8		
8-Mar	9.8	9.5	8.0	7.6	6.5	9.1	12.0	8.9	10.1	13.2	9.4	10.8	7.7	6.7	7.3	6.3	6.2	4.8	2.8	1.0	1.1	1.8	1.5	1.6	13.2	6.8		
9-Mar	2.6	2.8	2.8	2.3	1.4	2.0	1.8	1.0	6.0	8.9	10.1	9.4	10.3	9.8	8.8	6.4	5.9	4.3	2.7	0.5	0.6	0.5	0.5	0.0	0.1	10.3	4.2	
10-Mar	0.0	0.0	0.8	0.1	0.0	0.2	0.3	0.7	5.0	5.5	5.1	5.0	6.6	5.8	6.1	6.0	6.0	5.1	3.6	3.9	4.3	3.9	1.6	0.2	6.6	3.2		
11-Mar	0.3	0.2	0.1	0.8	1.9	2.3	3.0	5.0	6.7	5.2	6.5	6.2	7.3	6.7	5.1	6.3	5.9	7.8	8.3	8.9	9.2	9.2	10.1	10.6	10.6	5.6		
12-Mar	10.0	8.4	9.9	10.0	8.6	9.0	10.6	11.3	14.3	12.9	13.8	13.2	13.7	13.9	14.8	14.9	12.4	10.0	9.7	8.4	4.7	1.9	1.8	2.5	14.9	10.0		
13-Mar	1.8	1.0	2.4	2.9	3.5	2.0	0.9	0.0	1.1	3.9	2.8	3.2	4.7	4.1	6.6	5.6	5.8	6.9	8.3	8.2	7.1	7.4	4.1	5.7	8.3	4.2		
14-Mar	4.7	6.7	6.4	2.8	2.9	1.9	1.0	0.9	6.6	10.2	11.4	10.6	10.9	11.3	10.6	10.4	10.7	9.6	7.2	7.0	8.8	7.1	8.2	7.9	11.4	7.3		
15-Mar	7.3	5.8	1.9	0.4	0.4	1.9	0.7	0.9	3.8	3.2	4.8	6.5	7.4	7.4	8.5	4.2	6.8	5.1	5.5	5.1	5.4	5.2	3.2	4.1	8.5	4.4		
16-Mar	4.1	5.9	5.7	1.2	0.2	0.1	0.3	0.2	1.7	3.7	3.2	4.7	8.1	10.1	9.1	8.8	7.1	5.1	3.8	3.8	2.8	2.9	5.3	4.8	10.1	4.3		
17-Mar	5.6	4.2	4.5	3.4	0.8	0.8	0.1	0.0	2.9	6.3	7.3	10.3	11.1	10.8	10.7	7.1	6.4	10.8	6.4	3.9	7.9	10.9	9.3	6.6	11.1	8.2		
18-Mar	3.9	3.1	2.8	2.2	0.1	2.0	3.7	4.7	6.6	8.9	10.1	11.8	9.6	10.5	10.3	9.8	10.8	10.5	10.7	9.5	9.0	7.5	7.0	6.8	11.8	7.1		
19-Mar	6.6	5.3	3.9	5.8	5.8	5.3	4.7	6.1	7.9	8.0	9.1	11.6	11.8	12.6	12.7	13.1	11.6	12.0	8.3	5.9	4.7	6.8	8.2	8.7	13.1	8.2		
20-Mar	7.8	7.9	8.8	7.0	7.4	7.5	5.3	5.4	10.5	10.6	13.6	15.8	15.1	15.1	13.9	11.9	9.7	7.8	5.0	3.2	2.9	3.8	3.2	3.7	15.8	8.5		
21-Mar	2.8	3.8	4.8	4.4	4.8	5.4	5.2	6.6	8.5	10.8	11.5	14.4	15.6	11.6	11.0	9.7	9.0	8.5	3.3	5.5	6.4	7.6	9.5	10.1	15.6	7.9		
22-Mar	6.1	5.1	7.0	2.5	1.6	1.3	1.9	1.4	1.8	4.0	3.4	2.9	3.9	4.3	5.0	4.7	5.7	3.7	2.4	3.5	5.1	4.1	0.8	0.8	7.0	3.5		
23-Mar	0.0	1.5	5.0	3.1	5.0	3.3	6.4	5.1	5.6	7.0	6.4	5.9	7.1	7.5	5.3	4.2	7.8	5.9	4.7	3.3	3.3	3.6	4.4	3.8	7.8	4.8		
24-Mar	3.3	2.7	4.5	3.8	3.0	1.4	0.5	2.3	4.2	6.4	7.1	7.8	7.2	10.8	10.1	8.4	8.5	4.5	1.4	2.2	3.3	2.1	2.0	1.5	10.9	4.5		
25-Mar	1.8	1.5	1.7	0.4	0.8	1.2	1.2	5.7	4.0	4.8	7.5	7.9	7.5	7.7	5.9	5.3	4.6	4.1	2.6	0.3	0.1	1.3	2.1	1.9	7.9	3.4		
26-Mar	1.3	1.8	1.3	0.7	1.7	1.5	0.9	1.1	0.8	4.2	5.2	4.7	4.8	5.1	5.5	6.4	5.7	5.0	3.7	3.4	3.3	3.1	2.0	2.4	6.4	3.1		
27-Mar	1.7	2.4	3.7	3.2	3.5	6.0	6.4	6.7	8.0	8.0	7.7	9.8	9.4	8.8	8.4	8.2	8.1	8.9	6.5	7.7	7.9	8.3	5.7	3.1	9.8	6.8		
28-Mar	1.6	1.8	2.6	3.5	1.2	2.5	3.3	4.3	4.9	4.4	5.2	3.2	4.3	5.3	5.6	5.3	3.8	2.9	2.4	1.8	1.1	0.0	0.1	0.4	5.6	3.0		
29-Mar	0.2	0.5	1.0	0.8	0.8	1.2	0.3	2.4	2.3	1.3	1.3	3.0	4.2	4.0	5.9	5.7	5.3	4.6	3.4	2.4	1.7	5.2	5.9	5.6	5.9	2.9		
30-Mar	5.6	6.2	3.6	3.6	6.4	4.2	0.5	5.1	7.2	8.0	7.1	7.5	7.9	8.5	5.4	4.6	5.0	4.5	3.5	0.2	0.6	0.2	0.3	0.2	8.5	4.3		
31-Mar	0.3	0.5	0.5	0.9	1.4	0.7	0.3	1.4	2.9	2.4	2.8	3.3	2.8	2.8	4.2	3.4	3.5	4.1	2.5	1.2	0.8	0.1	0.1	0.0	4.2	1.8		

BARR	Maximum Hour//Monthly Average	20.2
	Total Hours in Month	744
	Valid Hours//Percent Data Captured	100.0%

Meteorological Report
The Doe Run Company
Wind Direction

Site Name: Rivermines

Average Interval: 01 Hour

Units: Degrees

Sampling Frequency: 01 Second

2012	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	24 Hour Avg
Day																										
1-Mar	262	247	231	182	185	205	215	225	355	289	236	196	165	163	173	174	178	181	168	154	152	159	140	178	201	
2-Mar	187	198	33	160	183	183	200	200	200	212	232	263	269	279	280	282	297	316	316	311	284	226	225	247	233	
3-Mar	247	244	251	254	253	237	243	259	271	283	268	274	277	278	275	295	302	307	312	296	241	222	230	240	265	
4-Mar	228	234	233	229	224	248	253	235	256	287	285	272	263	289	17	86	76	94	68	19	340	308	310	325	214	
5-Mar	333	333	331	320	352	4	356	320	346	299	255	284	180	108	122	174	181	173	185	172	177	182	192	194	230	
6-Mar	192	188	190	188	188	175	186	190	195	198	195	199	200	198	195	188	188	186	186	187	192	191	188	180	190	
7-Mar	187	190	189	190	197	198	198	202	197	198	199	193	194	187	193	196	188	189	189	187	186	191	192	195	193	
8-Mar	195	200	193	197	210	211	310	329	318	324	327	333	326	346	332	335	337	333	320	317	251	270	290	287	287	
9-Mar	253	254	240	239	225	233	229	239	318	344	347	340	1	341	352	355	29	53	68	64	128	39	168	329	216	
10-Mar	314	60	30	173	191	331	338	157	155	171	143	128	163	188	152	157	158	159	153	144	153	167	166	350	178	
11-Mar	352	262	8	31	85	67	68	164	173	155	171	172	170	188	162	142	142	150	156	157	177	174	174	181	152	
12-Mar	188	189	188	191	191	193	189	198	199	199	198	194	202	202	200	205	204	199	188	194	190	184	225	221	197	
13-Mar	212	222	238	231	242	220	172	210	258	282	256	114	252	203	218	218	188	166	178	182	179	186	188	193	208	
14-Mar	193	201	196	186	188	169	183	195	201	202	211	217	215	206	207	210	203	180	182	180	190	189	200	200	196	
15-Mar	207	222	227	192	218	226	307	273	222	189	202	184	159	182	186	200	190	116	328	179	112	109	129	253	200	
16-Mar	237	199	223	51	173	194	210	220	103	78	98	134	176	187	192	186	194	178	160	166	162	187	199	191	171	
17-Mar	191	203	210	191	132	173	176	201	225	217	179	190	189	198	192	195	93	347	135	160	167	185	181	179	188	
18-Mar	170	158	173	179	170	207	210	180	185	191	193	199	195	188	184	185	187	188	190	189	184	185	188	192	186	
19-Mar	191	174	158	181	181	183	175	178	188	174	183	186	178	180	175	170	169	174	187	160	157	172	180	179	175	
20-Mar	172	169	173	173	171	170	154	153	169	166	173	178	174	176	171	172	166	155	139	128	128	153	153	147	162	
21-Mar	142	143	154	161	162	155	151	157	184	170	168	168	173	168	159	148	148	183	155	129	123	139	184	171	155	
22-Mar	181	185	252	258	234	84	130	189	172	120	195	150	103	95	112	137	156	155	120	157	168	159	210	99	158	
23-Mar	165	124	170	123	96	163	119	183	176	183	209	211	228	248	275	265	247	287	234	240	237	233	230	229	202	
24-Mar	227	252	242	260	282	258	259	259	292	312	333	332	339	331	343	350	341	284	280	258	223	229	237	233	280	
25-Mar	245	231	243	240	286	277	299	326	341	3	340	343	339	335	20	25	36	65	82	132	178	195	213	203	208	
26-Mar	194	207	198	230	223	201	188	249	355	63	124	109	85	89	106	95	98	106	93	92	87	109	137	108	148	
27-Mar	128	137	139	132	140	149	157	160	180	175	180	203	194	202	203	213	192	187	183	186	188	197	200	215	177	
28-Mar	235	235	239	235	234	222	218	238	249	275	273	281	231	215	219	39	82	75	129	109	32	32	176	172	184	
29-Mar	182	204	180	170	80	125	37	13	12	87	15	62	68	53	31	32	61	73	78	97	152	178	194	204	100	
30-Mar	192	198	200	189	194	219	203	214	228	226	221	238	222	218	241	286	286	298	316	222	190	166	197	173	222	
31-Mar	179	171	158	18	77	185	354	61	54	40	72	51	76	86	48	94	101	107	122	118	151	30	195	294	118	

BARR

Total Hours In Month	744
Valid Hours	744
Percent Data Captured	100.0%

Meteorological Report

The Doe Run Company

$\Sigma \theta$

Site Name: Rivermines

Average Interval: 01 Hour
Units: Degrees

2012	Hour																									24 Hour Avg
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Mar	12.3	9.7	3.7	4.9	2.1	14.5	14.8	17.2	8.0	34.8	46.3	42.4	27.2	26.5	22.8	21.2	20.2	17.2	15.9	14.9	14.9	15.6	11.4	18.5	18	
2-Mar	17.3	15.1	39.1	22.7	18.1	15.8	18.3	15.0	15.9	18.4	20.6	21.6	20.6	20.9	21.3	22.0	20.0	18.1	13.1	13.7	13.9	13.6	14.8	12.8	18	
3-Mar	11.8	13.7	13.2	11.0	11.4	11.6	13.2	16.5	22.4	23.9	22.8	24.9	23.6	20.8	22.6	24.0	20.9	18.7	14.2	14.5	12.0	10.8	16.0	5.9	17	
4-Mar	9.9	15.5	13.5	9.7	24.1	28.3	6.2	11.7	17.4	28.8	26.8	25.6	24.8	29.4	30.7	20.9	20.6	20.4	19.6	18.1	19.0	15.4	14.7	13.5	19	
5-Mar	14.4	15.2	15.6	14.9	15.9	15.9	17.0	21.8	37.4	34.0	52.2	39.8	60.8	53.5	41.7	33.1	24.3	18.5	18.6	18.8	21.8	20.2	18.0	18.4	27	
6-Mar	19.8	20.8	19.0	18.2	14.8	16.7	18.1	16.6	15.7	17.9	18.7	18.5	16.6	18.0	18.0	17.2	18.6	15.9	17.0	17.1	18.7	15.5	16.8	17.7	17	
7-Mar	17.2	17.5	17.5	17.4	17.4	16.6	17.0	18.6	15.9	15.9	18.9	17.7	17.5	17.7	18.2	16.7	17.4	15.6	16.3	18.2	17.6	16.3	15.6	15.5	17	
8-Mar	16.2	17.1	14.8	15.5	18.9	19.4	19.9	20.3	15.1	14.9	18.9	15.3	15.8	16.7	19.5	18.5	15.7	17.5	18.1	25.4	18.8	20.1	20.7	18		
9-Mar	16.0	15.6	13.8	12.9	14.6	14.7	16.8	15.9	24.5	16.7	17.2	20.7	19.4	20.1	20.7	27.5	22.2	19.2	13.3	5.3	13.8	5.6	3.9	2.6	16	
10-Mar	2.4	2.2	4.8	0.0	1.7	8.3	7.8	34.4	23.6	27.7	31.8	28.8	35.0	34.1	33.1	27.1	23.3	18.7	14.1	15.3	18.6	17.2	14.2	27.5	19	
11-Mar	24.7	6.6	13.4	10.2	28.8	21.4	24.0	21.5	18.1	21.3	18.8	19.2	20.2	20.1	21.5	20.3	20.9	23.5	20.7	23.3	18.6	19.4	17.6	17.8	20	
12-Mar	18.7	15.8	15.5	15.6	18.9	18.1	18.4	18.8	18.8	16.7	17.3	18.7	18.1	17.6	17.7	17.5	17.4	14.4	13.7	12.7	15.7	13.0	16.1	11.3	16	
13-Mar	11.4	8.8	12.2	11.9	12.1	18.8	10.5	2.4	14.8	27.0	41.6	66.8	35.9	63.0	24.7	29.5	22.6	21.0	16.2	15.0	15.1	14.8	18.2	15.6	22	
14-Mar	15.1	14.4	11.5	11.8	9.2	11.9	9.5	10.3	19.6	18.2	18.9	20.1	21.3	20.0	21.1	19.0	18.3	18.6	14.9	15.1	14.4	15.5	13.9	14.2	16	
15-Mar	15.7	17.8	15.3	9.0	12.0	15.1	18.3	24.9	22.5	21.0	17.7	21.9	20.7	21.6	17.8	29.4	25.5	29.7	36.3	22.4	26.2	46.7	36.3	32.9	23	
16-Mar	13.0	35.3	34.5	20.6	8.6	5.2	7.7	10.7	17.5	22.7	33.0	29.2	19.6	15.4	16.5	16.3	18.2	17.1	15.7	16.0	24.4	22.6	14.9	13.8	19	
17-Mar	12.3	12.0	15.4	42.0	11.9	12.6	5.4	2.1	28.7	21.6	25.8	19.7	21.5	20.3	19.8	17.2	18.6	15.6	37.0	29.5	16.7	14.1	15.8	18.0	19	
18-Mar	16.6	17.1	18.3	14.4	2.6	14.4	19.2	23.3	18.5	16.9	17.4	20.2	17.8	17.2	17.3	20.3	18.3	16.8	14.7	15.6	18.3	18.0	15.1	15.8	16	
19-Mar	16.7	18.8	22.2	15.9	16.4	15.8	18.2	17.4	17.3	20.0	22.1	21.7	20.7	20.9	22.3	21.3	21.4	19.5	20.2	20.4	21.0	18.4	18.7	18.3	19	
20-Mar	18.7	19.6	17.9	18.7	18.7	18.2	19.8	21.8	21.4	23.3	20.7	20.5	21.0	21.2	22.0	20.9	20.7	22.9	22.6	22.7	20.9	20.9	20.5	21		
21-Mar	20.1	21.9	18.9	20.5	19.2	19.7	22.3	24.1	21.5	23.5	23.7	22.5	18.6	22.2	22.6	24.8	23.5	24.1	23.3	25.4	23.4	22.9	21.9	20.8	22	
22-Mar	21.7	25.7	18.0	20.6	16.1	21.4	34.9	19.6	28.4	22.9	25.3	36.9	30.8	31.4	30.7	27.4	28.4	28.0	15.6	12.7	15.7	18.2	16.1	17.4	23	
23-Mar	0.6	33.2	21.3	40.0	38.6	41.1	22.9	18.1	20.4	22.1	22.8	25.7	25.7	20.9	30.5	27.8	21.5	22.6	16.1	12.3	13.5	13.6	13.4	15.8	23	
24-Mar	17.5	18.5	17.3	18.1	17.2	17.3	14.1	17.2	25.6	21.4	23.1	24.4	22.1	21.5	19.0	19.8	15.2	20.7	12.7	17.3	11.4	15.1	15.7	20.5	18	
25-Mar	15.4	22.4	20.0	12.6	14.8	16.7	15.1	15.6	20.3	20.4	23.9	23.8	26.9	22.7	26.2	29.0	26.0	21.1	16.8	5.2	2.7	10.3	17.4	15.8	18	
26-Mar	11.3	18.3	14.4	9.6	16.6	18.0	9.3	13.6	28.8	24.4	29.4	34.4	28.2	26.6	26.5	28.1	23.1	22.9	21.2	20.0	22.4	22.6	20.8	21.0	21	
27-Mar	17.1	14.9	22.6	21.5	21.2	18.8	23.2	23.3	20.7	22.7	28.1	23.3	22.7	22.6	22.1	20.4	17.3	15.4	14.4	14.6	15.6	13.9	13.5	15.9	19	
28-Mar	11.4	14.4	19.2	14.9	11.9	11.3	12.9	15.7	20.7	23.5	27.1	31.5	36.2	22.9	19.5	36.4	23.6	24.4	19.9	19.3	15.4	1.2	0.9	8.3	18	
29-Mar	8.4	10.6	37.0	24.6	18.4	16.7	5.3	12.2	15.3	37.0	49.0	34.3	33.6	33.5	25.9	21.5	23.0	21.5	19.5	20.5	21.7	15.9	16.7	13.0	22	
30-Mar	11.1	11.6	10.9	10.1	12.6	34.7	13.8	17.1	19.7	25.2	24.2	28.4	25.4	23.5	21.8	24.8	24.5	22.0	14.5	10.4	7.0	3.5	2.0	4.5	17	
31-Mar	7.5	7.1	23.5	28.6	31.3	13.0	13.5	19.7	27.1	33.7	36.4	37.8	43.2	47.5	29.7	27.2	28.4	21.6	21.0	17.0	12.4	8.5	17.3	2.1	23	

BARR

Total Hours in Month
Valid Hours
Percent Data Captured

744

744

100.0%

Meteorological Report
The Doe Run Company
Temperature

Site Name: Rivermiles

Average Interval: 01 Hour

Units: Deg. C

Sampling Frequency: 01 Second

2012	Hour	24 Hour																									
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max
1-Mar	8	6	4	2	0	0	0	2	8	11	15	17	19	19	20	20	20	19	18	16	15	14	13	11	14	20.2	11.2
2-Mar	16	18	14	14	15	15	17	18	20	22	23	22	19	13	13	9	6	5	4	4	3	2	1	2	23.1	12.1	
3-Mar	2	2	1	0	0	0	0	2	4	5	7	8	9	9	10	9	8	6	5	4	1	-1	-2	-2	9.5	3.7	
4-Mar	-3	-4	-3	-4	-4	-3	-3	-1	4	7	9	10	10	11	12	11	11	10	8	7	6	6	5	5	11.5	4.5	
5-Mar	3	2	0	0	0	-1	-2	0	1	3	5	7	8	9	11	12	12	11	9	8	7	6	7	7	11.6	5.1	
6-Mar	7	7	7	8	8	7	8	10	12	15	17	20	21	21	21	21	20	19	18	18	17	17	17	16	21.5	14.8	
7-Mar	15	15	14	14	14	15	15	16	17	17	17	18	20	19	20	20	19	19	19	19	20	20	20	20	19	20.3	17.6
8-Mar	19	18	17	16	17	17	9	7	6	4	4	4	4	5	5	4	4	4	4	2	1	1	2	1	19.2	7.4	
9-Mar	1	1	0	-1	-2	-3	-3	1	5	8	10	12	13	14	14	14	14	14	12	10	7	3	2	1	0	14.0	5.5
10-Mar	-1	-2	-2	-3	-3	-4	-4	1	6	9	12	13	15	16	17	17	17	16	14	12	11	10	8	4	17.4	7.6	
11-Mar	2	1	2	2	5	4	5	10	11	9	11	12	11	11	11	10	11	11	12	13	14	14	15	14	14.6	9.1	
12-Mar	15	15	16	16	15	15	15	16	17	19	21	23	25	26	26	27	26	25	22	20	19	17	15	15	26.8	19.4	
13-Mar	13	11	10	10	10	9	8	12	18	21	23	24	27	27	28	28	27	26	23	22	21	19	19	19	28.2	19.0	
14-Mar	19	19	18	17	15	13	14	17	22	24	25	26	27	28	28	29	28	26	24	24	23	22	21	21	29.5	22.1	
15-Mar	20	20	19	17	16	17	17	18	20	20	22	23	23	25	24	22	20	18	17	16	15	16	15	15	24.7	19.0	
16-Mar	15	15	15	14	13	13	13	14	15	16	16	16	18	19	22	24	24	24	23	21	20	19	18	19	19	24.3	17.8
17-Mar	19	18	18	17	16	15	15	17	22	24	26	26	26	26	25	23	19	16	16	17	18	18	17	17	26.4	20.0	
18-Mar	17	17	16	16	14	14	15	19	21	23	25	25	25	26	26	25	25	23	22	22	21	21	21	21	25.7	21.0	
19-Mar	21	21	20	21	21	20	20	20	21	22	24	26	26	27	27	28	25	23	22	21	21	21	21	21	27.2	22.7	
20-Mar	21	21	20	19	19	19	18	18	19	21	23	24	25	26	26	26	26	25	24	23	23	23	22	22	25.9	22.5	
21-Mar	22	21	21	20	20	20	20	20	21	22	23	24	24	24	24	25	24	23	22	23	23	23	23	22	24.6	22.4	
22-Mar	21	18	14	12	12	11	12	12	12	13	14	15	16	17	18	20	20	19	17	15	15	14	12	11	21.2	15.0	
23-Mar	10	11	13	12	10	10	11	12	13	15	16	17	18	15	15	17	18	13	11	10	10	9	10	9	18.3	12.8	
24-Mar	10	10	10	10	10	10	10	10	12	13	16	18	19	21	22	22	22	20	17	16	15	14	14	12	22.5	14.8	
25-Mar	12	12	12	12	12	12	12	12	14	15	18	20	21	22	23	23	23	22	20	17	15	13	12	11	23.3	16.5	
26-Mar	11	11	10	10	9	9	9	13	17	19	21	22	23	24	24	24	24	23	21	19	18	17	16	16	24.1	17.1	
27-Mar	15	14	15	14	14	13	13	15	17	20	22	24	25	28	27	28	27	26	24	23	22	21	20	20	27.9	20.2	
28-Mar	17	17	18	19	18	17	18	21	23	24	26	27	27	27	27	28	28	28	27	26	25	24	23	22	27.2	21.2	
29-Mar	15	14	14	14	15	14	13	16	17	19	21	23	24	25	25	25	25	24	22	20	18	20	21	20	25.4	19.5	
30-Mar	19	20	18	17	17	16	15	19	22	24	28	28	28	28	27	27	28	28	23	19	17	16	14	13	27.9	21.1	
31-Mar	13	12	11	12	12	11	11	14	15	17	20	22	25	26	26	26	26	26	24	22	19	18	17	16	26.5	18.3	



Maximum Hour//Monthly Average	29.5
Total Hours in Month	744
Valid Hours	744
Percent Data Captured	100.0%

Meteorological Report
The Doe Run Company
Site Pressure

Site Name: Rivermines

Average Interval: 01 Hour

Units: mmHg

Sampling Frequency: 01 Second

2012	Hour	24 Hour																								
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1-Mar	742	742	742	742	743	743	743	742	743	742	741	740	739	738	737	738	736	736	736	736	736	735	735	735	743	740
2-Mar	735	734	733	732	731	731	730	730	729	729	728	728	730	733	734	737	738	739	740	741	741	742	742	742	742	735
3-Mar	742	742	742	742	742	743	743	743	743	744	744	744	743	743	742	742	742	742	743	743	744	744	744	744	744	743
4-Mar	743	743	743	743	743	743	744	744	744	744	744	744	743	743	742	742	742	742	743	743	744	744	744	744	744	743
5-Mar	747	749	750	750	751	752	753	754	754	755	755	754	753	753	753	752	752	752	752	752	752	752	751	751	751	755
6-Mar	751	750	750	750	749	749	749	749	749	748	748	747	747	748	748	745	745	745	745	745	745	748	748	748	748	751
7-Mar	748	748	748	748	748	748	748	748	748	747	747	748	748	745	745	745	744	744	744	744	744	744	744	744	744	747
8-Mar	744	744	744	743	743	743	743	743	746	747	747	748	748	745	745	745	745	744	744	744	744	744	744	744	744	745
9-Mar	758	758	757	757	757	757	757	757	757	757	757	757	756	756	756	756	756	756	756	756	756	756	756	756	756	755
10-Mar	757	757	756	756	756	756	756	756	756	756	756	756	755	754	753	752	752	751	751	751	751	752	752	752	752	754
11-Mar	752	751	751	750	750	750	750	750	750	751	751	750	750	749	748	748	747	747	747	746	746	745	745	745	744	752
12-Mar	743	743	743	743	743	743	743	743	743	743	743	743	742	742	742	741	741	741	741	741	742	742	743	744	744	743
13-Mar	745	745	748	746	748	746	747	747	747	747	747	747	746	745	745	745	745	745	745	745	745	746	746	746	746	746
14-Mar	746	746	746	746	746	747	747	747	747	747	747	747	746	745	745	744	744	744	744	744	745	746	746	746	746	746
15-Mar	748	748	747	747	747	747	747	747	747	747	747	747	746	746	745	746	746	746	747	747	748	747	747	748	748	747
16-Mar	748	748	745	746	748	746	747	747	747	747	748	748	747	746	746	745	745	745	745	745	745	746	746	746	746	746
17-Mar	746	746	745	745	745	746	746	746	747	746	746	746	745	745	744	744	744	744	745	745	745	746	745	745	745	745
18-Mar	745	745	745	745	746	746	748	748	748	748	748	748	746	745	744	744	744	744	744	744	744	744	744	744	744	745
19-Mar	744	744	743	743	743	744	744	744	744	744	744	743	743	742	742	741	741	741	740	740	741	741	741	742	742	742
20-Mar	742	742	742	741	742	742	742	743	743	743	743	743	742	742	742	741	741	741	741	741	742	742	743	743	742	742
21-Mar	743	743	743	743	743	744	744	744	744	744	744	744	743	743	743	742	742	742	742	742	742	742	743	743	744	743
22-Mar	743	743	744	744	744	744	745	745	746	746	746	745	745	744	743	743	742	742	743	744	744	744	744	744	746	744
23-Mar	744	743	743	742	743	742	741	742	742	741	741	740	740	740	740	740	741	741	741	741	741	741	741	741	741	741
24-Mar	741	741	741	740	741	741	741	741	742	742	742	742	741	741	741	741	741	741	741	742	742	743	743	744	744	742
25-Mar	744	744	744	744	744	744	745	745	746	746	746	746	746	745	745	745	745	745	745	745	746	746	746	746	746	745
26-Mar	746	746	747	747	747	747	748	748	748	748	748	748	747	747	746	746	746	746	746	746	746	746	747	747	747	747
27-Mar	747	747	747	747	747	747	747	747	748	748	747	747	746	745	745	744	743	743	743	743	743	744	744	744	745	745
28-Mar	744	744	744	744	744	744	744	745	745	745	745	745	744	744	743	743	743	743	743	743	743	744	744	744	744	744
29-Mar	743	743	743	743	744	744	744	744	744	744	744	743	743	742	741	741	741	740	740	740	740	741	740	740	740	742
30-Mar	740	740	740	740	740	739	740	740	740	740	740	739	739	738	738	737	737	737	738	739	739	740	740	740	740	739
31-Mar	741	741	741	741	741	742	742	742	742	742	742	741	741	741	740	740	739	739	739	740	740	740	740	740	741	741

BARR	Maximum Hour//Monthly Average	757
	Total Hours In Month	744
	Valid Hours//Percent Data Captured	100.0%

